

Friday, October 07, 2016 2:34:53 PM

Page 1

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Start Date: 10/6/2016 **Start Qty:** 4.00

4

Customer:

Required Date: 10/18/2016 **Req'd Qty:** 4.00

4

Reference:

Approvals: **Process Plan:** VS (Signature) **Date:** 16/10/11 **Tooling:** _____ **Date:** _____
 QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3560

Rev D

100

BAND SAW

0.00

100

Bandsaw

Jeaspa Bandsaw

Memo

0.00

Cut blanks 16.750" long

110

HAAS CNC VERTICAL MACHINING #1

0.66

110

HAAS 1

HAAS CNC vertical machine #1

Memo

0.00

1- Mill as per Folio FA694 Rev: AA & Dwg D3560 Rev: D
2-C'sink 0.196" hole on manual mill as per dwg D3560
3-Deburr per dwg D3560

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Quality Control

Memo

0.01

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____	
Misidentified ☐	Past Due ☐																																																														

Work Order ID 151790

Friday, October 07, 2016 2:34:53 PM

151790

Page 2

Item ID: D3560-2

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Arm

Stop ***NS2***

Start Date: 10/6/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 10/18/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							60-6 DAS PL 14 SVC 9-89
130						4	0		
QC	Memo	0.01							
Quality Control									16/10/17
210	Identify as per dwg & Stock Location: <u>WA3</u>	0.00							OCT 27 2016 DAS 24 9-89
210						4			
Packaging	Memo	0.01							
Packaging	LOCATION: WA003								
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.07							DAS 21 9-89
Quality Control									OCT 27 2016

DAS
21
9-89
OCT 27 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
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Misidentified ☐	Past Due ☐																																																																

Picklist Print

Friday, October 07, 2016 2:34:53 PM

Page 1

Work Order ID: 151790

151790

Parent Item: D3560-2

D3560-2

Parent Item Name: Arm

Start Date: 10/6/2016

Required Date: 10/18/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A New Issue 06-11-10 JLM use -042
13.06.03 PER DWG REV.F DD VERF:JLM

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.500X05.00 0		Purchased	No				f	48.8050		5.873684			

M6061T6B0 500X05 000

6061-T6 Bar .500 x 5.00

DAS
33
9-89

16/10/16

Location	Loc Qty	Loc Code
MAT	1.43	
nm134533	1.43	
MAT001	47.375	
m130527	0.045	
m134984	12	
m135377	35.33	

5.85

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD		Work Order:	151740
Description: Arm		Part Number:	D3560-2
Inspection Dwg: D3560 Rev: D		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.507	+0.000/-0.001	0.507	✓		—	gauge pin
Ø0.196	+0.005/-0.001	0.197	✓		MIP-24	vern
Ø1.000	+0.010/-0.001	1.001	✓		↓	↓
0.500	+/-0.010	0.504	✓			
0.250	+/-0.010	0.246	✓			
0.275	+/-0.010	0.271	✓			
0.188	+/-0.010	0.185	✓			
2.000	+/-0.010	2.000	✓			
1.700	+/-0.010	1.700	✓			
Ø0.385 x 100°	+/-0.010 x 0.5°	0.375	✓		SCC-08	caliper
0.250 Deep	+/-0.010	0.250	✓		MIP-08	Dial depth Mic

Measured by:	DAS 33 9-89	Audited by:	DAS 14 9-89	Prototype Approval:	N/A
Date:	16/10/16 / 16-10-17	Date:	16/10/17	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue P/O D3560-042	KJ/JLM	
B	07.06.13	Dimensions updated per Dwg Rev B	KJ/JLM	
C	09.06.11	Dwg Rev updated	KJ	

RELEASED
07.12.16

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151790
VLC
16/12/11

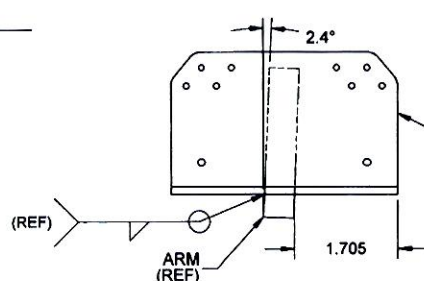
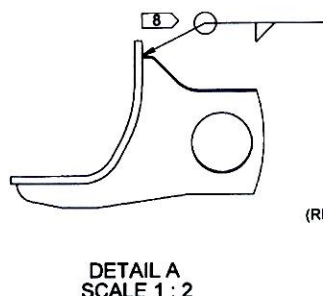
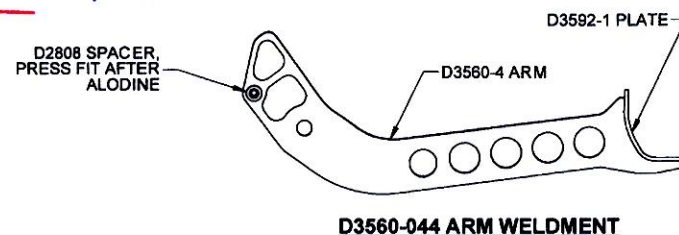
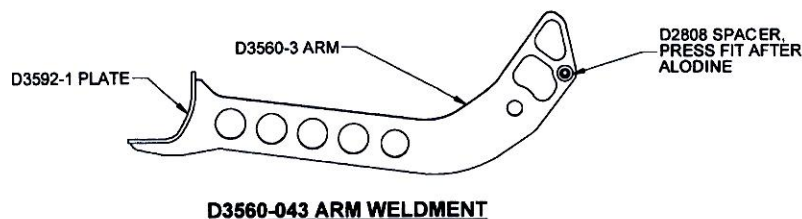
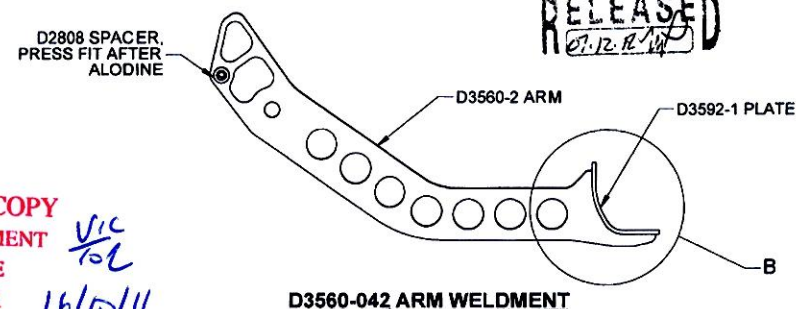
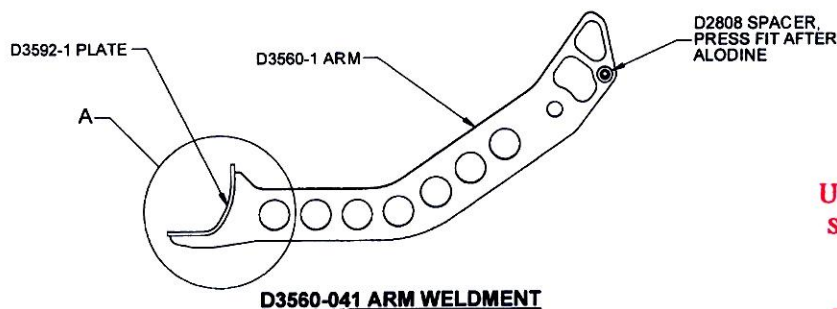
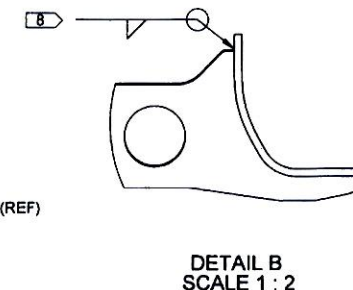
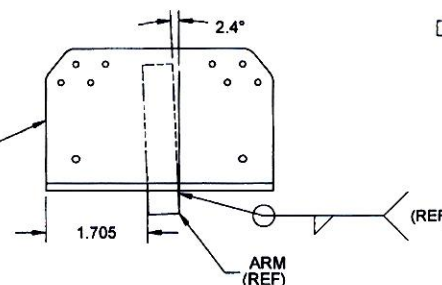


PLATE (REF)

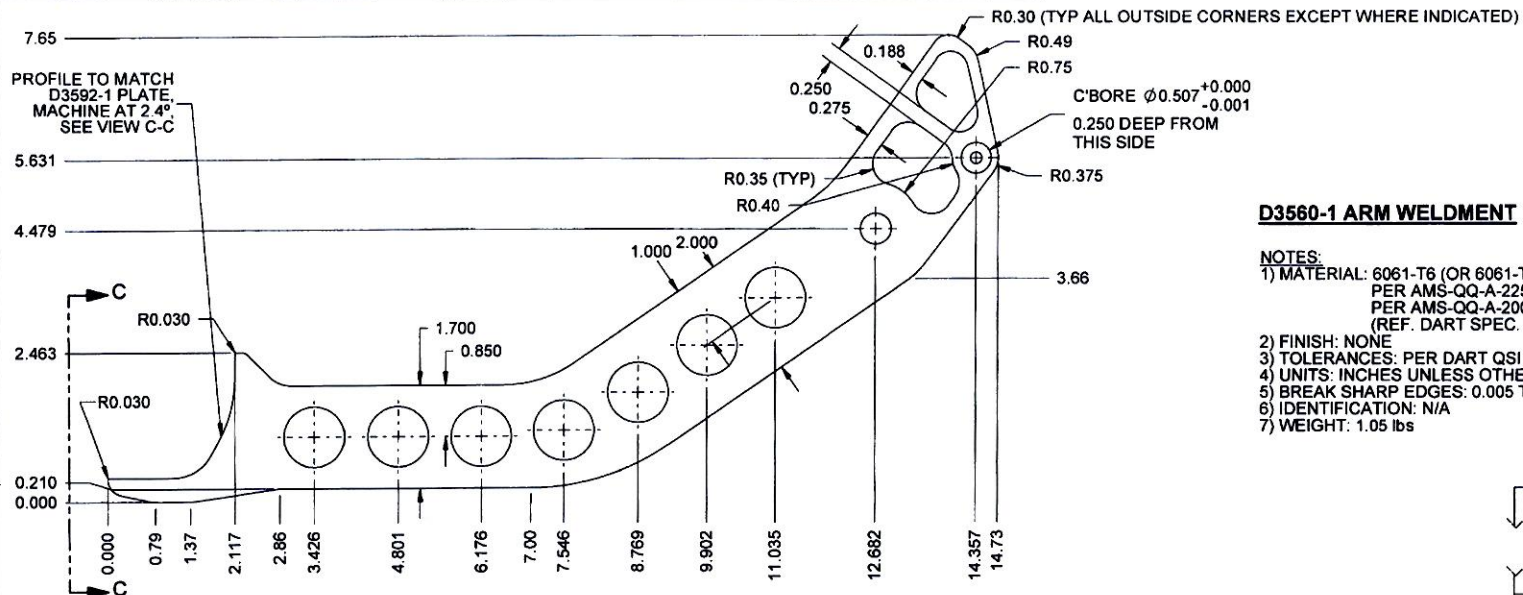


PARTS LIST

QTY -041	QTY -042	QTY -043	QTY -044	P/N	DESCRIPTION
X				D3560-041	ARM WELDMENT
	X			D3560-042	ARM WELDMENT
		X		D3560-043	ARM WELDMENT
			X	D3560-044	ARM WELDMENT
1	1	1	1	D2808	SPACER
1				D3560-1	ARM
	1			D3560-2	ARM
		1		D3560-3	ARM
			1	D3560-4	ARM
1	1	1	1	D3592-1	PLATE

D	ADD D2808 PRESS FIT NOTE; REDRAWN IN SOLIDWORKS	DC	07.11.16
C	REMOVE POWDER COAT	CP	07.08.19
B	REDESIGN AS WELDMENT, ADD POCKETS	CP	07.01.15
A	NEW ISSUE	CP	06.09.25
REV.	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.		SHEET 1 OF 5	
DATE	07.11.16	SCALE 1:1	
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. D3560		REV. D	
TITLE ARM WELDMENT		SHEET 1 OF 5	
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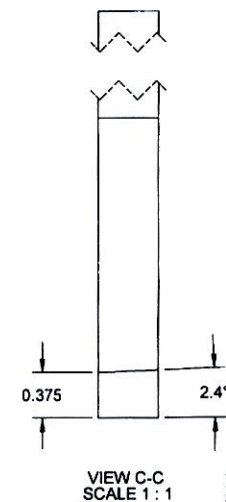
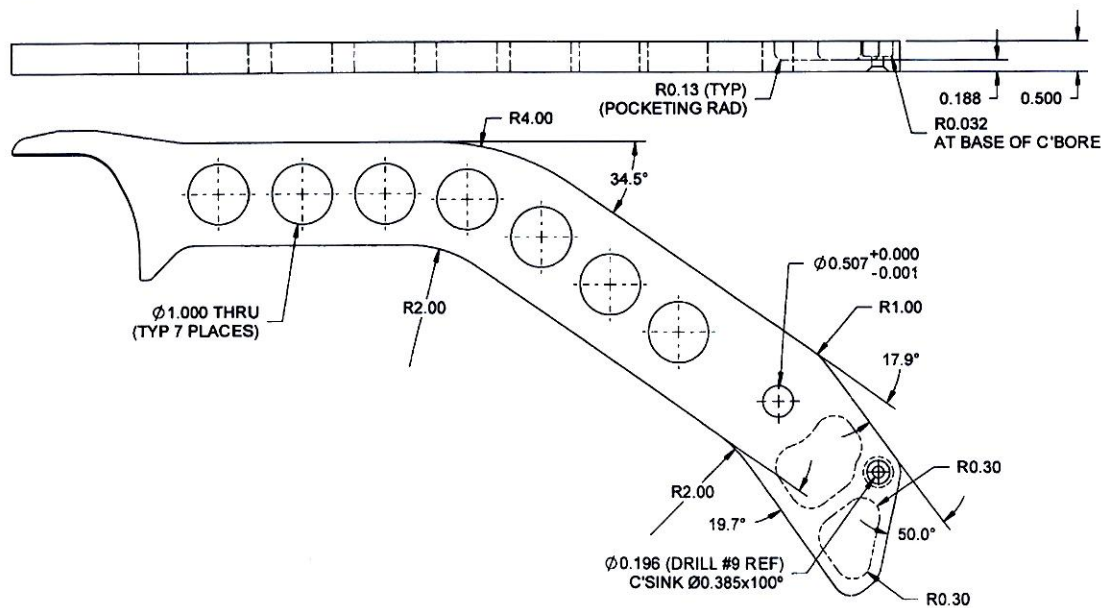
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 1.23 lbs (TYP)
 - 8) WELDING: PER DART QSI 004



D3560-1 ARM WELDMENT

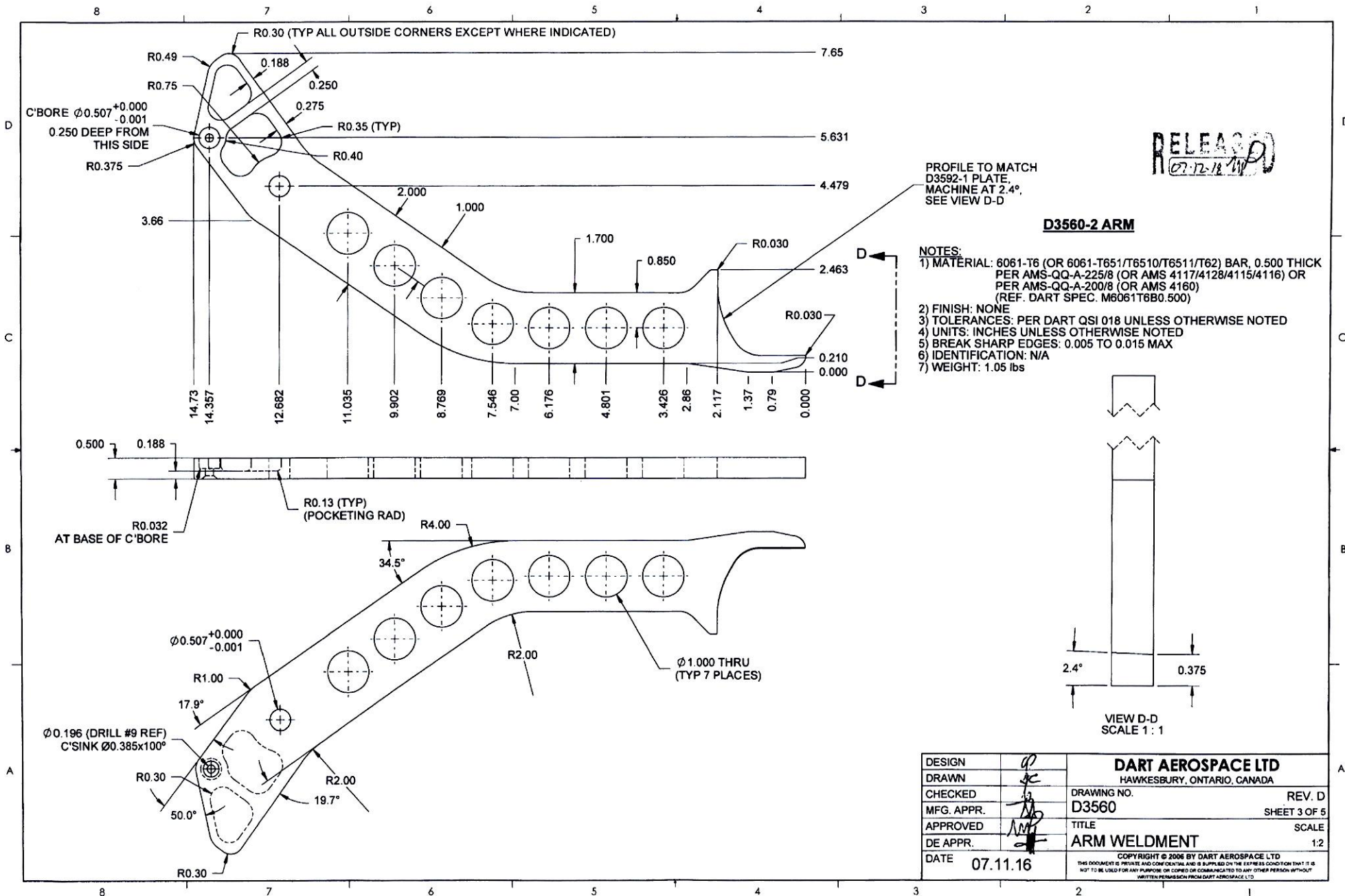
NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6511/T62) BAR, 0.500 THICK
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR
PER AMS-QQ-A-200/8 (OR AMS 4180)
(REF. DART SPEC. M6061T6B0.500)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.05 lbs

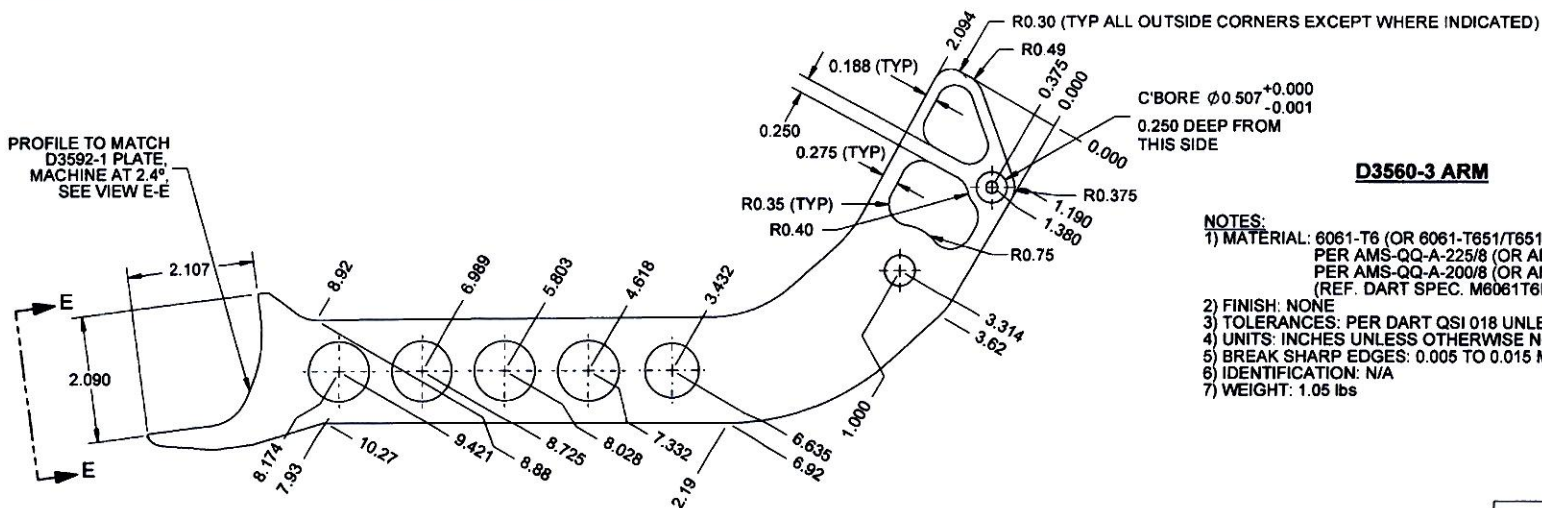


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07.12.16

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3560	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.		ARM WELDMENT	1:2
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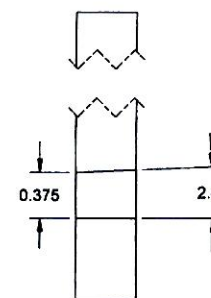
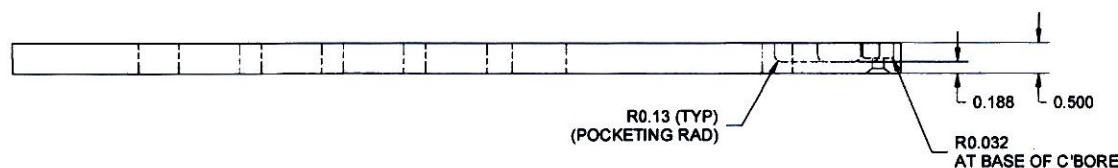
PROFILE TO MATCH
D3592-1 PLATE,
MACHINE AT 2.4°
SEE VIEW E-E



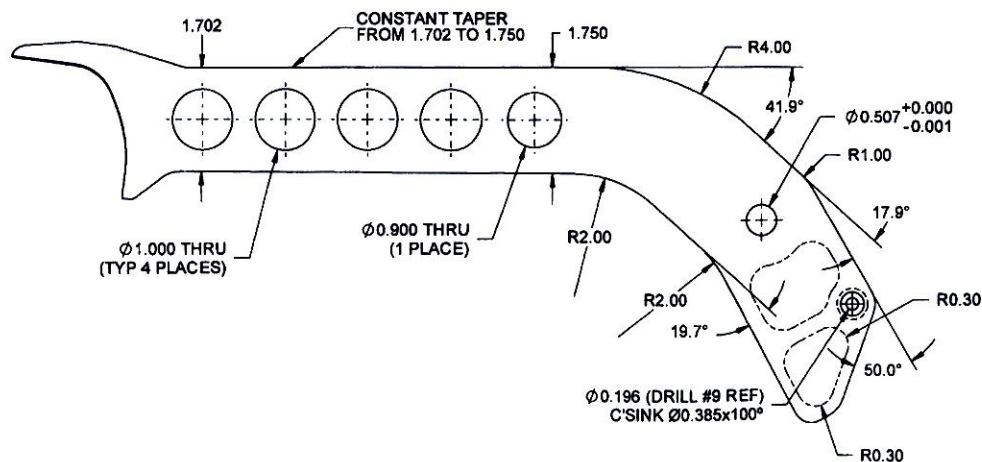
D3560-3 ARM

NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR, 0.500 THICK
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR
PER AMS-QQ-A-200/8 (OR AMS 4160)
(REF. DART SPEC. M6061T6B0.500)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.05 lbs

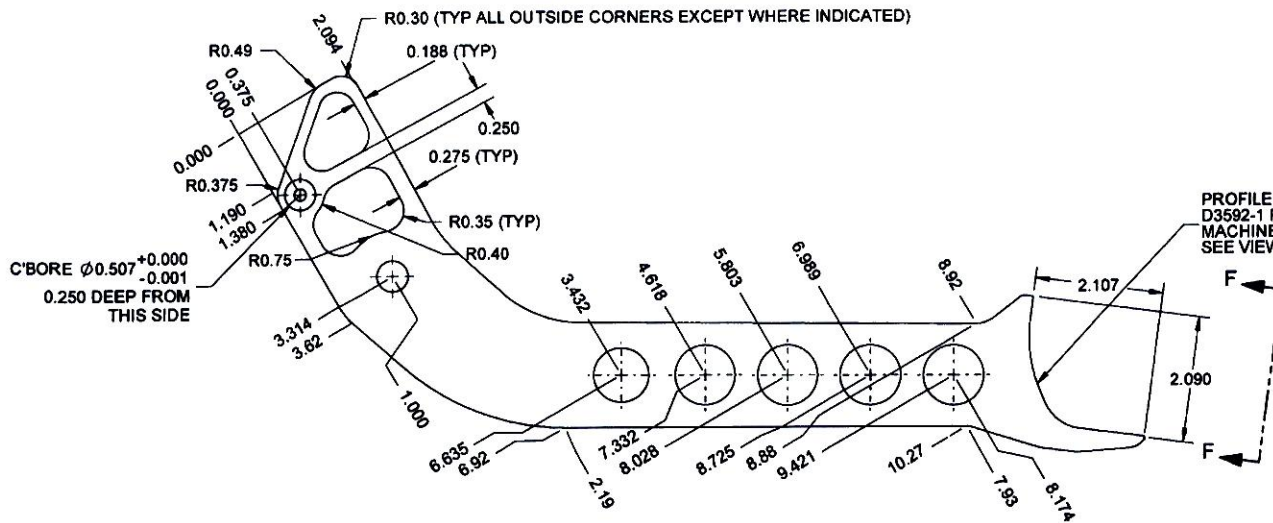


VIEW E-E
SCALE 1:1



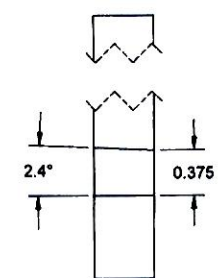
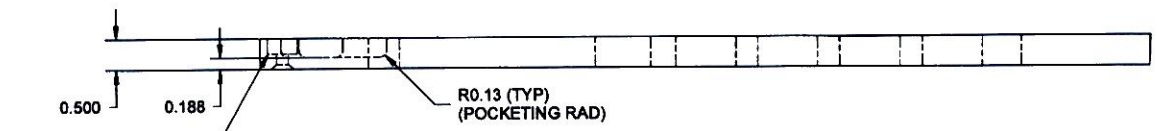
DESIGN	dp	DART AEROSPACE LTD	
DRAWN	AC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV.
MFG. APPR.	AS	D3560	SHEET 4 OF 5
APPROVED	MP	TITLE	SCALE
DE APPR.	AS	ARM WELDMENT	1:
DATE	07.11.16	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

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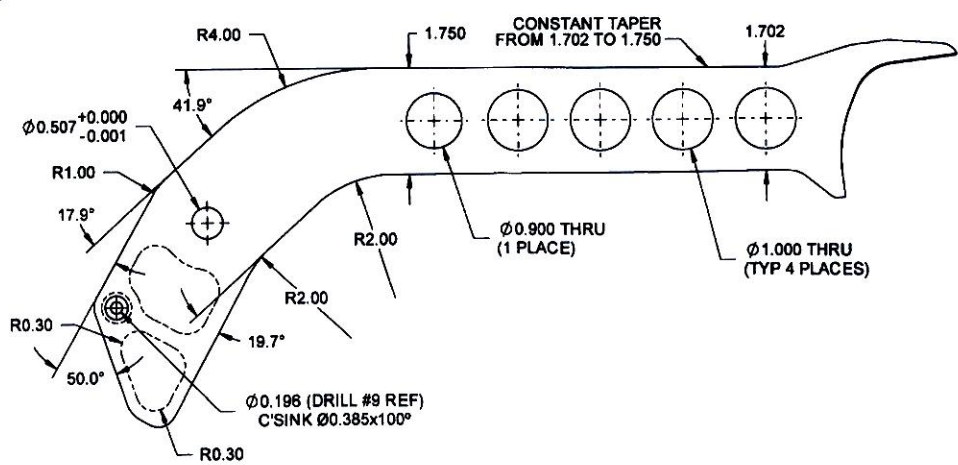
D3560-4 ARM

- NOTES:**
- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR, 0.500 THICK
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR
PER AMS-QQ-A-200/8 (OR AMS 4160)
(REF. DART SPEC. M6061T6B0.500)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 1.05 lbs



VIEW F-F
SCALE 1:1

RELEASED
07-12-16



DESIGN		DART AEROSPACE LTD	
DRAWN	BC	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3560	SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		ARM WELDMENT	1:2
DATE	07.11.16	COPYRIGHT © 2006 BY DART AEROSPACE LTD	
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